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It Used to Be a Desert:
A Retrospective on the Dolores Project Four Corners Archaeological Program

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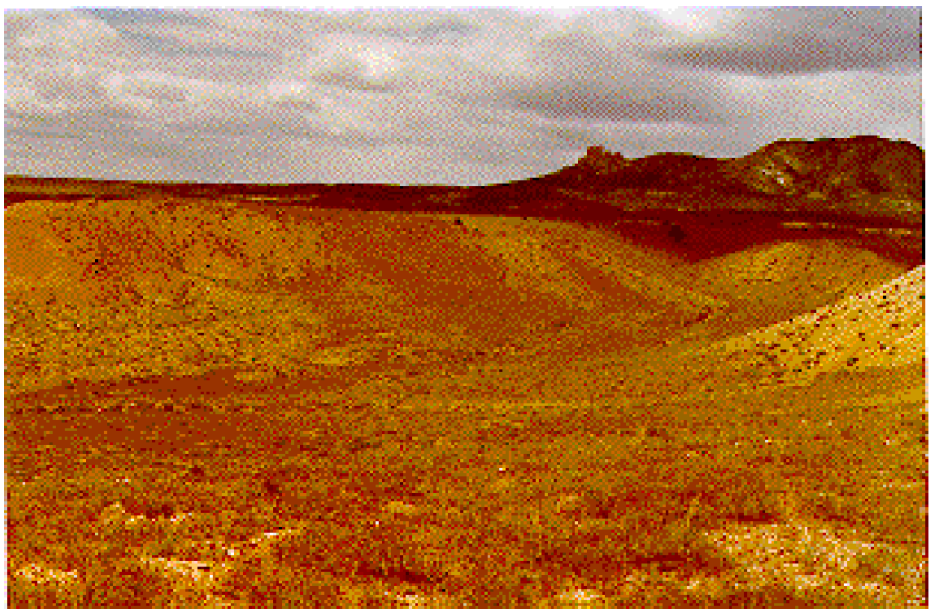


When the Bureau of Reclamation (Reclamation) hired me in 1991 to manage the final stages of the Dolores Project archaeological program, one of my first tasks was to visit the Ute Mountain Ute Indian Reservation. I was there to assist the Tribe's Farm and Ranch Enterprise in the archaeological mitigation program for their farm development plan. The Towoac Canal had yet to be built to the reservation, and the land was in its more or less natural state. Although the Utes had engaged in pastoral activities, the land had not seen substantial use since Puebloan abandonment in the early 1300s. I was awe-struck by the harsh and barren landscape. I was also intrigued by the pristine sites at the toe of Sleeping Ute Mountain; it is hard to believe that there was a substantial population eking out a living 700 years ago. Although it was difficult to put my finger on it, they seemed strangely different from anything else that I had seen.

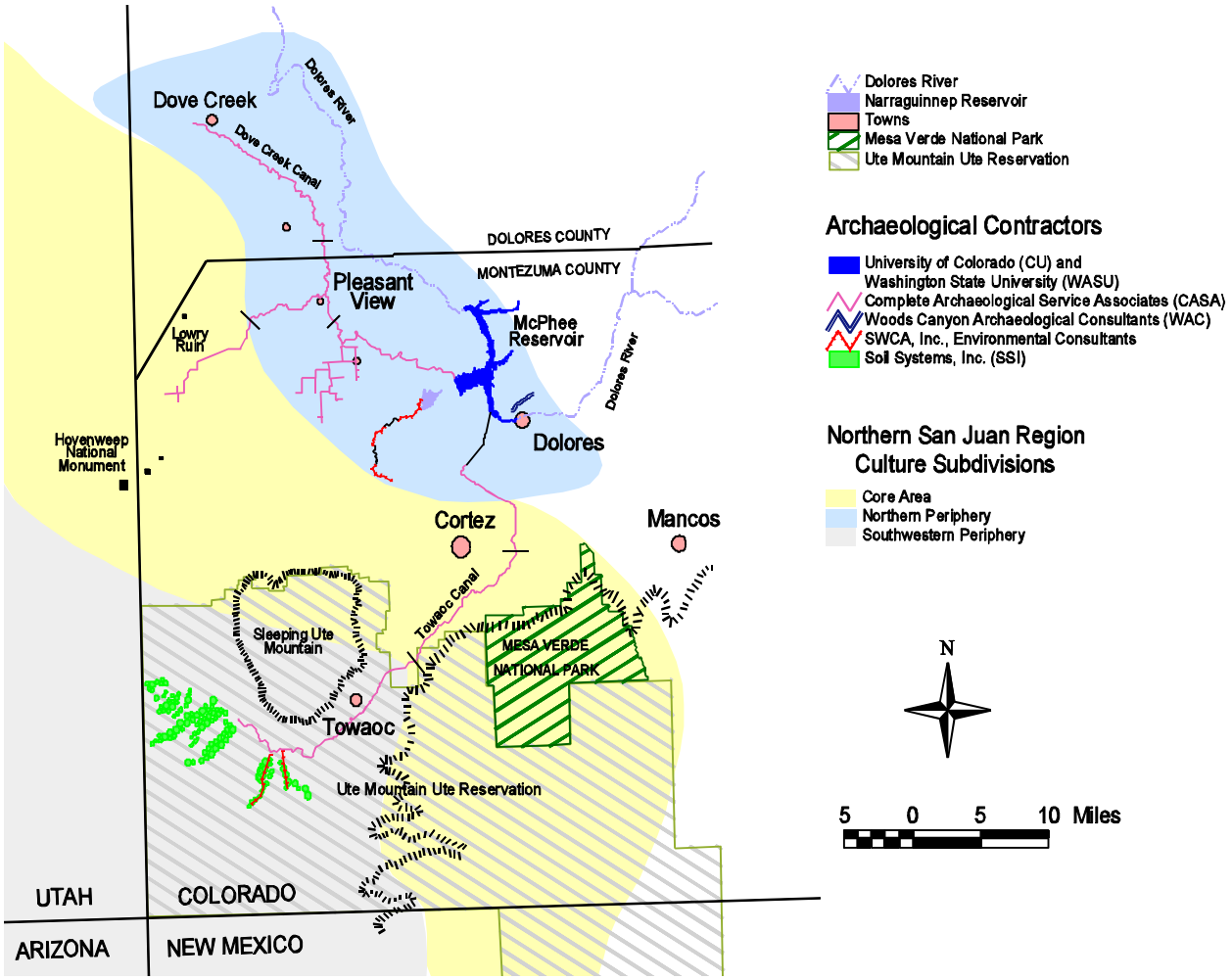


Figure 1. Location Map: The Dolores Archaeological Program

The Dolores Archaeological Project (DAP) occurs in the Colorado portion of the Northern San Juan Region, an area best known for its extensive Pueblo II and Pueblo III Anasazi, or if you prefer, Ancestral Pueblo ruins. This paper emphasizes DAP data recovery conducted after the conclusion of mitigation for McPhee Reservoir (RDAP). Reclamation had identified an additional need to satisfy mitigation of water delivery and irrigation development (King, n.d.). The focus of the program had shifted, and mitigation requirements were addressed by specific project feature (Dove Creek Canal, Ute Mountain Ute Irrigated Lands, etc.). For the purposes of this paper, in order to distinguish them from the RDAP, I am referring to these features collectively as the Four Corners Archaeological Program (Four Corners Program), after the title of Reclamation's on-call archaeology contract for that area.

COMPONENT/ TEMPORAL AFFILIATION	TOTAL
Undifferentiated Prehistoric	3
Archaic (ca. 6000 B.C. - A.D. 400)	17
Late Archaic/Basketmaker II (ca. 800 B.C. - A.D. 450)*	4
Basketmaker III (ca. A.D. 450 - 750)*	35
Transitional BM III to Pueblo I (ca. A.D. 680 - 750)*	2
Undifferentiated Basketmaker III or Pueblo I (ca. A.D. 450 - 950)*	10
Pueblo I (ca. A.D. 725 - 950)*	17
Early Pueblo II (ca. A.D. 930 - 1025)*	1
Late Pueblo II (ca. A.D. 1000 - 1150)*	29
Transitional Pueblo II to Pueblo III (ca. A.D. 1075 - 1150)*	22
Undifferentiated Pueblo II or Pueblo III (ca. A.D. 950 - 1300)*	4
Early Pueblo III (ca. A.D. 1125 - 1200)*	8
Late Pueblo III (ca. A.D. 1200 - 1300)*	27
Undifferentiated Puebloan (A.D. 600 - 1300)	3
Historic Native American (late 1800s - 1950s)	9
Historic Euroamerican (early 1900s)	1
TOTAL Components	192

Table 1. Components Investigated, Four Corners Program. *Pecos Classification. Actual dates vary across the project area.

The Archaeology

In comparison to the RDAP which conducted excavations at 101 sites centered within the McPhee Reservoir takeline, the Four Corners Program conducted data recovery or testing at 145 sites along a 60- mile arc which extends from the Utah border south of Sleeping Ute Mountain to Pleasant View, where it bifurcates and one tentacle extends north to Dove Creek, and another west toward Hovenweep (Figure 1). While the RDAP's primary contributions were to the understanding of late Basketmaker III/ Pueblo I and historic Euroamerican occupation of the Dolores River valley, the Four Corners Program is conspicuous, for its relative lack of Pueblo I components (Table 1). This is probably reflective of village aggregation in higher elevation settings during the drier conditions of the eighth and ninth centuries (away from where modern water delivery features are constructed). The absence of early Pueblo II components reinforces RDAP findings that a brief exodus occurred in this part of the Northern San Juan Region in the early part of the tenth century. Therefore the Four Corners Program compliments the RDAP, with significant contributions in the Late Archaic/Basketmaker II, Basketmaker III, late Pueblo II, Pueblo III, and historic Ute/Navajo periods. As another function of a project configuration, the Four Corners Program utilized site-specific research designs and intensive data recovery, while the RDAP employed a broad-based research design and extensive sample excavation strategies. Both have their advantages and disadvantages. While the RDAP enabled examination of community systems and settlement within a large contiguous area, the Four Corners Program provided a cross-section across an extended area and enabled the examination of activity areas within sites (Larry Hammack, personal communication 1998).

Beginning in 1983, a series of consecutive contracts with private consulting firms was issued for the Four Corners Program (Table 2). Chronologically, the contracts are as follows:

1) From 1983-1992, Complete Archaeological Service Associates (CASA), under the direction of Laurens and Nancy Hammack, conducted excavations at 67 sites along the Dove Creek, South, and Towoac Canals, and the Hovenweep, and Fairview Laterals;

2) In 1984, Woods Canyon Archaeological Consultants, Inc., under the direction of Jerry Fetterman and Linda Honeycutt, conducted excavations on four sites on the Dolores Plateau.

3) From 1993-1996, SWCA, Inc. (SWCA), under the direction of Mark Chenault, conducted excavations at eleven sites along the Lone Pine Canal, and the Towoac laterals; and

4) From 1993-1997, Soil Systems, Inc. (SSI), under the direction of Cory Breternitz, conducted excavations at 63 sites on the Ute Mountain Ute Irrigated Lands Project.[1] Incidently, David Breternitz, by this time retired from the University of Colorado, was an employee of SSI. He commented to me that not too many other people can lay claim to have been present on the first and last field days of a 25-year project.

ARCHAEOLOGICAL CONTRACTOR	PROJECT FEATURE	NO. OF SITES TREATED	TOTAL
CASA	Dove Creek Canal	28	
	South Canal	11	
	Fairview Laterals	1	
	Hovenweep Laterals	6	
	Towaoc Canal	21	**67**
Woods Canyon	May Canyon Road	4	**4**
SWCA	Lone Pine Laterals	6	
	Towaoc Laterals	5	**11**
SSI	Ute Mtn. Ute Irrigated Lands	63	**63**
		TOTAL SITES TREATED	**145**

Table 2. Number of sites investigated, by project feature and contractor.

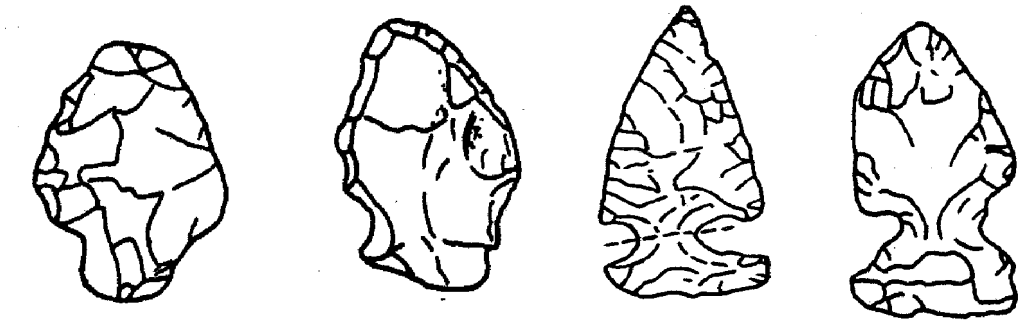
[1]Work conducted by SSI under contract to the Ute Mountain Ute Tribe was funded in part by a grant from Reclamation.

The following is a summary of what I consider to be the most significant findings of the Four Corners Program, or what has piqued my interest the most. The DAP intersects with three of the four subdivisions of the Northern San Juan Region (Figure 1) as defined by Fuller (1988: 18-19). I have described the primary findings in reference to those subdivisions.

Southwestern Periphery

Late Archaic/Early Basketmaker II Land Use on the Ute Mountain Piedmont
(500 B.C. - A. D. 100)

Among the 21 sites with Late Archaic and/or Early Basketmaker II components investigated on the Four Corners Program, the most significant is 5MT10525, excavated by SSI on the southern piedmont of Sleeping Ute Mountain. It is an open site which includes a shallow, basin-shaped pitstructure with a central hearth with a deflector, 20 postholes, two metates and other groundstone, a floor pit, and six extramural features (Errickson 1994:16, Billman 1997). While radiocarbon dates (between 405 and 75 B.C.) are within the range of Basketmaker II, the En Medio Phase (800 B.C. to A.D. 400) projectile point assemblage suggests that the site was possibly occupied by Late Archaic peoples.



It is the earliest known site with pithouse architecture in extreme southwestern Colorado. Another Late Archaic/Early Basketmaker II site (5MT5376) was excavated by CASA north of Sleeping Ute Mountain (Hammack 1991 cited in Billman 1997), and displayed a similar floor plan and artifact assemblage. John Mabry (1998, personal communication) opined that the sites were "strikingly similar" to each other.

These two sites, and their settings, raise new questions on land-use patterns and seasonality for the Late Archaic/Early Basketmaker II Period. The permanent architecture, artifact assemblage, and the presence of an interior hearth imply the sites may have been occupied in cold weather months (Billman 1997). Therefore, 5MT10525 (and 5MT5376) may represent a single-household residential base camp for a group forced to intensively exploit a reduced annual range, perhaps due to population pressure. Ownership over that range had to be asserted through the construction of a strategically-placed permanent structure which was occupied for a longer part of the year than would be expected. This type of land-use pattern may have set the stage for horticulture. Billman, however, cautions that these conclusions are based on limited data and any

conclusions of Late Archaic land use require further investigations.

Historic Archaeology on the Ute Mountain Ute Indian Reservation (A.D. 1880-1950)

Nine historic sites were excavated as part of the Four Corners Program (Curtis 1992, Curtis and Billman 1996). This was supplemented by archival research and oral histories. Prior to the Four Corners Program, historic archaeological research on the Ute Mountain Ute Reservation was virtually non-existent. The investigations revealed a pattern of livestock grazing and seasonal use of the Ute Mountain piedmont from the 1880s to the 1950s by the Ute and maybe the Navajo. The findings demonstrated a contrast in historical land use patterns between the Ute Mountain Utes and the neighboring Southern Utes, and established a preliminary site typology for the area.

Fort Lewis College Archive Photo

Evidence of Violence at Early Pueblo III Sites (A.D. 1125-1160)

The Four Corners Program excavated a suite of six sites on the southern piedmont of Sleeping Ute Mountain which demonstrate evidence of violence during the Early Pueblo III period. Four sites are within a 1 km by 2 km area and are part of the late Cowboy Wash Community. The Cowboy Wash sites share a common thread; they all contained disarticulated human remains (DHR) and all were suddenly abandoned in A.D. 1150. The context and disposition of these remains have been interpreted as evidence of violence and possible cannibalism (Lambert 1997, Billman 1997, Leonard 1997, Dice 1993). This finding corresponds with other evidence of early Pueblo III cannibalism in the lower Mancos River drainage (White 1992) and elsewhere in the Mesa Verde Region (Errickson 1993: 775) . Billman argues that cannibalism occurred at Cowboy Wash, and the physical (Dice 1993, Lambert 1997) and contextual (Leonard 1997) evidence is compelling. It was a possible consequence of two factors: severe drought and the social and ideological breakdown as a result of Chaco collapse roughly ten years prior. It is interpreted as a short term response to a situation of competition for limited resources (Billman 1997).

The DHR sites of the Cowboy Wash community (5MT7704, 5MT10010, 5MT10206, and 5MT10207) share a number of similarities indicating the inhabitants of Cowboy Wash may have been an immigrant community from the Chuska area: The apparent alignment of these sites is S: SE toward Shiprock (the most prominent geographic feature in the northern Chuska Valley) rather than to the southeast as is typical, there are quantities of Chuskan ceramics, and there is a contrast with the roomblock-kiva architectural pattern one may expect to find for early Pueblo III sites in the Northern San Juan Region (Cory Breternitz, personal communication 1998). The kivas were constructed at roughly the same time (A.D. 1130) and served as domiciles (Errickson 1993, Leonard 1997). The Chuskans, perhaps viewed as interlopers, may have been victims of a terrorist attack (Billman 1997).

Site 5MT7704

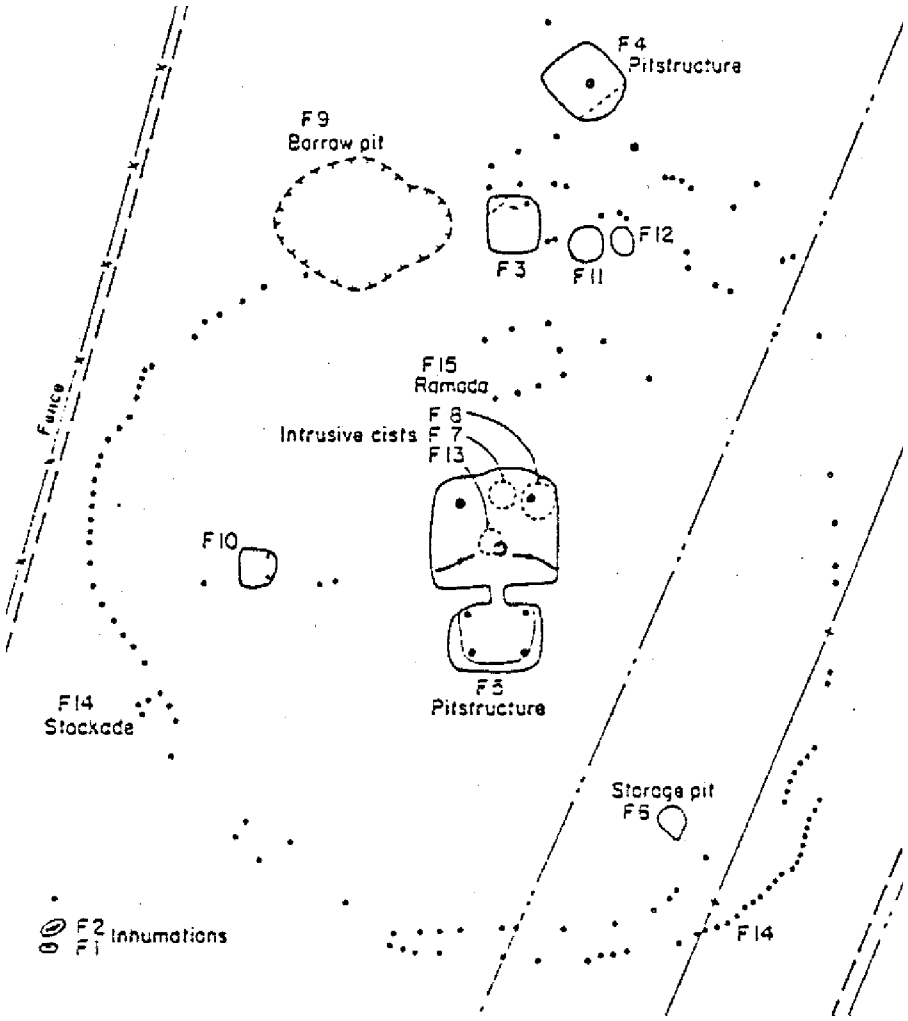
However, other evidence in the Southwestern Periphery belies a model of intercommunity strife and terrorism-induced cannibalism as the sole explanation of the observed data. At one DHR site (5MT7704, where a human jawbone had been placed in a ceramic vessel and placed in a recess), a strong element of ritual can be implied. At another (5MT7723, where human long bones were burned) implies a possible gastronomic explanation (Dice 1993:87-88). And an isolated burial (site 5MT10967) of Shoshonean or Fremont affiliation (Nickens and Mabry 1993), had met his maker through blunt force trauma to the head; this may be an indicator of external stress in the region present during early Pueblo III.

Patterns of violence and conflict are clearly evident at Cowboy Wash. However, conclusions of cannibalism should be approached with caution. Because of the magnitude of the findings, they should be rigorously peer-reviewed. Errickson (1993: 776) offers that the depositional milieu, occupational and postoccupational formational processes, and how materials are classified and analyzed, all have a bearing on such interpretations. Furthermore, there have been a variety of alternative interpretations for disarticulated human remains, all of which should be given full consideration. Martin and Goodman state that "[c]annibalism is only one of several competing hypotheses for modified and altered remains". They cite witchcraft and associated ritual, secondary mortuary practices, conflict, "headhunting", warfare, and ritualized dismemberment as reasonable alternatives to the cannibalism explanation (Martin and Goodman 1995: 25). Criteria should be developed for analyzing these other alternative explanations.

Northern Periphery

Stockaded Basketmaker III Sites (A.D. 600-750)

An unusual concentration of sites with stockaded features was excavated on the northern periphery of the Northern San Juan Region. All together, eleven Basketmaker III sites with stockades or possible stockades have been identified within a 10 mile radius of Pleasant View, CO. Stockades are inferred by a series of postholes which encircle the central pitstructures. They are presumably latticework of small poles and brush woven into and supported by closely spaced posts (Morris 1991: 642).



The Rabbit Site (5MT9168)

There have been a variety of theories as to the function and distribution of these features. Rohn (1975 cited in Morris 1991:643) had suggested that stockades are a standard feature on most Basketmaker III (as well as PI and

PII) habitations. However, Four Corners Program excavations on the Hovenweep Laterals and elsewhere led Morris (1991: 643-644) to conclude that stockaded features are a ". . . common, but not a ubiquitous feature of Basketmaker III . . . habitations in the region". Stockades are absent at some Basketmaker III sites and this may have a direct correlation to site size. They appear to be most closely associated with multiple-pithouse habitations (Ibid.).

Suggestions as to the function of stockades have ranged from such mundane tasks as turkey management (Kuckleman and Morris 1988: 70, 428), containment of children and dogs, or midden garden enclosures (Morris 1991: 643), to defensive fortifications for pioneering settlements on the northern frontier (Rohn 1975 cited in Morris 1991:643).

The location and condition of this cluster of stockaded sites appear to support the latter for the Basketmaker III period. Chenault and Motsinger (1995, 1998) as a result of their work on the Four Corners Program cite the ". . . extensive burning and rich artifact assemblages . . . "at these sites as evidence that ". . . warfare is the best explanation for their destruction."(1998:13). Since the Basketmaker III Period represents the earliest colonization of this area it is likely that nomadic groups were displaced, which may have led to conflict. However they are quick to point out that function most likely is not purely defensive (Chenault and Motzinger 1998).

Stockaded Basketmaker III sites are not unknown away from the northern periphery, just not as common. For instance, there is a fine example from the Core Area (Errickson 1995:79-148), thirty miles to the south at the base of Mesa Verde. Stockades are difficult to identify unless they are actively sought out, and their identification may be predicated on burning (Chenault and Motzinger 1998). Therefore future work should concentrate on determining the actual distribution of these sites, to determine whether a "northern frontier" of early defensive fortifications indeed exists. In any case the phenomena of burned and stockaded Basketmaker III hamlets are now well recognized and a large contribution has been made to the understanding of early colonization (and the limits thereof) in the Northern San Juan Region.

Mesa Verde Core Area

Pueblo III Murals (1150-1275) at Knobby Knee Stockade (5MT2525) and Roundtree Pueblo (5MT2544)

Among the more important findings on the Four Corners Program were kiva murals at two sites on the Hovenweep Laterals (Morris 1991). The uncovering of these features posed a particular challenge to the excavators and conservators, because of their fragility, and because they were integral to the walls of the kivas (right). Since the structures were going to be destroyed by construction, backfilling to preserve the paintings was not an option. Since only limited conservation technology existed, methods for removing intact mural sections were developed in the field. The removal of the mural sections

was an unqualified success. They are now conserved at the Anasazi Heritage Center in Dolores and were recently on display as a part of the "Fragile Legacy" program. These are some of the best preserved examples of Pueblo III wall paintings in the Northern San Juan Region (Thomas and Mahoney in Morris 1991:1113).

Knobby Knee Stockade is a landmark site of the Four Corners Program. Contained within the Basketmaker III component (also discussed in the context of the stockaded sites, above) are unique impressed clay tablets (left), of unknown function. It is believed that they are sandal impressions. These are rather rare, found at only three other Basketmaker III sites in the northern Southwest. The Pueblo III component is remarkable for other aspects besides the mural: 1) it was a fine example of masonry architecture for that time period; and 2) The rich ceramic assemblage was well preserved and is emblematic of the fine artistic traditions of the Northern San Juan Region. The site was named for Kokopelli, depicted (with knobby knees) on a bowl which was on the kiva floor (see the collection photo under Private Property Issues, below).

The Program, Its Strengths and Weaknesses

The DAP was one of the largest cultural resources mitigation programs in American history. It spans a time frame of approximately twenty-five years at a cost of approximately $25 million. [I say "approximately" since the program has yet to reach its full completion.] The initial surveys in the 1970s for the Dolores project indicated large numbers of complex and well preserved archaeological sites would be impacted by project construction. Therefore in 1978, Reclamation executed a Memorandum of Agreement with the Colorado SHPO and Advisory Council on Historic Preservation which outlined program commitments. And in 1980 Congress, in its infinite wisdom, allowed for 4% of authorized project costs be dedicated to the recovery and preservation of archaeological materials (Breternitz 1993:120). This was a departure from the 1% normally allowed under the Archaeological and Historical Preservation Act, and not only expedited construction of the water project, but was seen as an opportunity to transcend the "salvage" mentality that was so pervasive in Cultural Resources Management (CRM) in the mid-to-late 1970s. Indeed, the work conducted by the University of Colorado under the direction of David Breternitz and William Lipe at McPhee Reservoir set the standard for subsequent large-scale archaeological mitigation in the Southwest.

The Four Percent Solution?

Several years ago David Breternitz published a fitting epitaph to the RDAP (*nee* DAP) in American Antiquity. One of the items he referred to under "Positive Aspects" of the program is the aforementioned 4% allocation of total construction costs dedicated to the Cultural Resources Program (1993:120). I acknowledge that a mitigation program of this scale would have been impossible to carry out without this level of funding. However, it was (and still is) a double-edged sword; the 4% was seen as a panacea for addressing the major impacts incurred upon cultural

resources. These days I tend to liken it to the Sherlock Holmes novel, the *Seven Per-Cent Solution,* where Holmes struggles with cocaine addiction and subsequent withdrawal.

The DAP (and the Dolores construction project as a whole), in the late 1980s and early 1990s was fraught with shortsightedness and a cavalier attitude toward funding. The program emphasis was to get the fieldwork done so construction could proceed, and cost considerations were a low priority. Subsequently, the 4% ceiling was exceeded, and some program commitments have yet to be met. Congress was very specific about what this funding was intended for, and a close examination of expenditures shows that some of those expenses should not have been taken from the 4%. One example of this is the common practice of allowing construction contractors to obtain borrow materials, waste areas, and staging areas through arrangements with local landowners, rather than using Reclamation designated areas. It is currently estimated that obtaining archaeological clearances for these contractor-acquired areas cost $1 million, all of which came out of the 4%. While allowing the contractors to make such arrangements probably resulted in construction cost savings, it had a reverse impact on the cultural resources budget. Reclamation is looking at "backing out" some of the above-mentioned questionable expenses, and examining other funding sources, to free up funding for publications, dissemination and synthesis.

However, there has been a long delay in getting reports out. The Four Corners Program contractors have produced a series of reports which rival scholarly studies elsewhere in the southwest, but due to lack of funding, many of them have yet to be published, and therefore are not readily available to other archaeologists and the public in general. William Lipe commented to me that the reports he'd seen are some of the best context reports ever done in the Southwest, and that it's a shame they aren't more accessible (personal communication 1998). With that being said, funding has been obtained for the publication of the Four Corners Program excavation reports in limited pressings. Those should be available in 1999.

Reclamation needs to more effectively disseminate DAP results to a wider audience in a cost-effective manner. This may include getting reports posted on the Internet and/or published on CD-ROM. Finally, there is a dire need for a synthesis of the Four Corners Program reports. If it ever comes to fruition, it will be a much more daunting effort than the RDAP synthesis, since the work was conducted by four different consulting firms over a discontiguous area.

Private Property Issues

Private property issues were poorly dealt with by Reclamation on the Four Corners Program. This was not a problem on the RDAP since the McPhee takeline was obtained in fee title by the U.S. Government. However for canals, laterals, borrow areas and the like, access was usually obtained through easements and temporary use agreements. Therefore legal rights to the materials recovered at a number of the sites belonged to the landowner This collection (below) from Knobby Knee Stockade was obtained only through deliberated negotiations with the landowners.

The Reclamation employees who were charged with obtaining agreements with landowners were under a tight time schedule and were typically unsympathetic to archaeological endeavors. Some landowners were unaware of archaeological activities taking place on their land, which understandably was a cause of friction. This put Reclamation archaeologists in the precarious (both ethically and legally) situation of at times having to turn artifact collections over to landowners once the materials were analyzed. Fortunately, this was the exception rather than the rule and the majority of collections are housed at the Anasazi Heritage Center. Nevertheless, much aggravation would have been saved if landowners had been approached in a proactive manner, and donation agreements obtained at the time access agreements were executed. An even better scenario would be to obtain in fee title any areas where collections are anticipated.

A common criticism of the Dolores Project is that the impacts on private land were not fully considered. The Four Corners Program, with the exception of the Ute Mountain Irrigated Lands, focussed on sites which were directly impacted by construction. Therefore it is likely that many undocumented sites have been impacted in the course of converting fallow or dry farming lands to irrigation. Additionally, the possible impacts of irrigation run-off ("return flow") have not been examined. Notwithstanding sensitivity to private property rights, in the future these issues should be taken into consideration when defining an Area of Potential Effects for an irrigation development project.

Mechanical Stripping as a Site Investigation Strategy

As a Phase I strategy at sites selected for data recovery, mechanical stripping developed into a standard field technique. After surface collection of artifacts and identification of surface features, and prior to subsurface excavation, a motor grader (or belly scraper or backhoe) is employed to remove the upper 10 to 20 centimeters of topsoil across the entire site area. This is to expose any features that have may have been obscured by plowing activities. After blading the surface is carefully shovel scraped and troweled to further define features (Morris 1991). While this method was originally developed for sites in plowed fields, it has also proven invaluable in unplowed areas such as the Ute Mountain area. This is important method of determining the full extent of a site, especially when one is interested in locating exterior features such as postholes and pits.

Conclusion

Now much of the greasewood and ricegrass at the toe of Sleeping Ute Mountain have been replaced by well-watered fields of corn and alfalfa; roads and fences are everywhere and there seems to be a new one every time I return. Notwithstanding one's personal opinion that such endeavors constitute ecological and economic folly, the transformation of a desert landscape into agricultural farmland

has been fascinating to witness. It is also hard to deny the contributions that have been made to the understanding the archaeology of the northern Southwest.

There are a number of other important aspects of the Four Corners Program which I inevitably have overlooked, from both an archaeological and management perspective. The subjects I have touched upon can be and have been more thoroughly presented in other papers and publications in order to do them justice. Any omissions or "glossing over" are my responsibility. My sole intention herein is to provide a snapshot of the accomplishments of the Four Corners Program.

Acknowledgments

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References Cited

Billman, Brian R., ed.
1997 *The Archaic Period Occupation of the Ute Mountain Piedmont.* Soil Systems Publications in Archaeology No. 21. Cortez, CO. [Draft]

Breternitz, David A.
1993 The Dolores Archaeological Program: In Memoriam. *American Antiquity* 58(1):118-125.

Chenault, Mark L. and Thomas N. Motzinger
1995 Stockaded Basketmaker Sites in the Mesa Verde Region. Paper presented at the 60th Annual Meeting of the Society for American Archaeology, Minneapolis, Minnesota.

1998 The Basketmaker III Period in the Mesa Verde Region (working title). In *Foundations of Anasazi Culture: Recent Research into the Basketmaker III Period in the Northern Southwest.* Paul F. Reed, editor. University of Utah, Salt Lake City. In preparation.

Curtis, Ross S.
1992 *Historical Archaeological Investigations in the Mariano Spring Vicinity, Ute Mountain Ute Reservation, Montezuma County, Colorado.* Complete Archaeological Research Associates Four Corners Archaeological Project Report 23. Cortez CO.

Curtis, Ross and Brian R. Billman, eds.
1996 *The Ute Mountain Ute Irrigated Lands Archaeological Project: The Historic Period Occupation of the Ute Mountain Piedmont.* Soil Systems Technical Report No. 96-15. Cortez, CO.

Errickson, Mary
1993 *Archaeological Investigations on Prehistoric Sites, Reach III of the Towoac Canal, Ute Mountain Ute Reservation, Montezuma County, Colorado.* Complete Archaeological Research Associates Four Corners Archaeological Project Report 21. Cortez CO.

1994 *Class I Cultural Resource Survey of Selected Lands, Ute Mountain Ute Reservation, Montezuma and La Plata Counties, Colorado.* Complete Archaeological Research Associates Report 94-10. Cortez CO.

1995 *Archaeological Investigations on Reach II of the Towoac Canal.* Complete Archaeological Research Associates Four Corners Archaeological Project Report 20. Cortez CO.

Fuller, Steven L.
1988 *Cultural Resource Inventories for the Dolores Project: The Ute Irrigated Lands Survey.* Complete Archaeological Research Associates Four Corners Archaeological Project Report 13. Cortez CO.

King, Thomas J.
n.d. Mitigation Plan, Scope of Work and Rationale, Dolores Project Canals and Laterals. On file, Bureau of Reclamation, Western Colorado Area Office, Durango CO.

Kuckleman, Kristin A., and James N. Morris (compilers)
1988 *Archaeological Excavations on South Canal*. Complete Archaeological Research Associates Four Corners Archaeological Project Report 11. Cortez CO.

Martin, Debra L. and Alan H. Goodman
1995 Demography, Diet and Disease in the Transitional Basketmaker III/Pueblo I Period. In *Studies in Ridges Basin Archaeology*. Animas-La Plata Archaeological Project Research Paper No. 4. Northern Arizona University, Flagstaff.

Morris, James N.
1991 *Archaeological Excavations on the Hovenweep Laterals.* Complete Archaeological Research Associates Four Corners Archaeological Project Report 16. Cortez CO.

White, Tim D.
1992 *Prehistoric Cannibalism at Mancos 5MTUMR-2346.* Princeton University Press. Princeton NJ.